Volume 261, Numbers 1–2, 1 June 1995

Contents

Letter

Thin SiO_2 growth by combined rapid thermal and plasma processing 1
N. Boumaiza, S. Achour and M.E. Tayar (Constantine, Algeria)

Synthesis and Characterization

Investigation of the process factor space on bias-enhanced nucleation of diamond. 4
S.D. Wolter, J.T. Glass (Raleigh, NC, USA) and B.R. Stoner (Triangle Park, NC, USA)

Conductivity of boron-implanted polycrystalline thin silicon films 12
F. Mansour, M. Bouchemat, M. Boukezzata, N.H. Touidjen (Constantine, Algeria), D. Bielle-Daspet (Toulouse, France) and K. Mirouh (Constantine, Algeria)

Rapid thermal processed thin films of niobium pentoxide (Nb_2O_5) deposited by reactive magnetron sputtering. 18
A. Pignolet, G. Mohan Rao and S.B. Krupanidhi (University Park, PA, USA)

Investigation of the titanium silicide formation in plasma activated physical vapour deposition 25
H. Wulff, J. Klimke, H. Steffen and C. Eggs (Greifswald, Germany)

Characterization of thin solid films of rare earth oxides formed by the metallo-organic chemical vapour deposition technique, for high temperature corrosion applications 31
G. Bonnet, M. Lachkar, J.C. Colson and J.P. Larpin (Dijon, France)

Variable-angle spectroscopic ellipsometry for deep UV characterization of dielectric coatings 37
A. Zuber, N. Kaiser (Jena, Germany) and J.L. Stehlé (Bois-Colombes, France)

Electrodeposition of $Zn_{1-x}Cd_xSe$ ($x = 0$–1) thin films 44
C. Natarajan, G. Nogami (Kitakyushu, Japan) and M. Sharon (Bombay, India)

Crystallinity, morphology and microstructure of chemical-vapor-deposited carbon films on different substrates 52
A.-S. Johannsson and J.-O. Carlsson (Uppsala, Sweden)

Porous SiO_2 films analyzed by transmission electron microscopy 59
L.M. Gignac (Hopewell, NY, USA), T.M. Parrill (Dallas, TX, USA) and G.V. Chandrashekhar (NY, USA)

Structure of epitaxial δ-NbN films deposited by cathode reactive sputtering 64
E.V. Shalaeva, R.S. Baryshev, M.V. Kuznetsov and B.V. Mitrofanov (Ekaterinburg, Russia)

Atomic force microscopy on cross-sections of optical coatings: a new method 70
A. Duparré, C. Ruppe (Jena, Germany), K.A. Pischow (Espoo, Finland), M. Adamik and P.B. Barna (Budapest, Hungary)

Stoichiometry of tantalum oxide films prepared by KrF excimer laser-induced chemical vapor deposition 76
Y. Imai, A. Watanabe, M. Mukaida, K. Osato, T. Tsunoda, T. Kameyama and K. Fukuda (Ibaraki, Japan)

Grain size and recrystallization of TiN, ZrN, NbN and CrN alloyed and multilayer films 83
R.A. Andrievski (Moscow, Russia), I.A. Anisimova, V.P. Anisimov, V.P. Makarov and V.P. Popova (Bishkek, Republic of Kirghizstan)

Growth and some properties of $In_xGa_{1-x}N$ thin films by reactive evaporation 87
Y. Sato and S. Sato (Akita, Japan)

Mechanical stress and electrical resistance of CrSi–O thin films 90
W. Brückner, G. Sobe, H. Grießmann, St. Baunack and G. Reiss (Dresden, Germany)

Preparation, structure, composition, optical and photoelectrochemical properties of vacuum annealed In–Se thin films . 98
S.N. Sahu (Bhubaneswar, India)

Elsevier Science S.A.

Epitaxial growth and thermal stability of thin Pd_2Si films on (001), (011) and (111) Si 107
J.F. Chen and L.J. Chen (Hsinchu, Taiwan)

Preparation of compositionally gradient Ti–TiN films by r.f. reactive sputtering. 115
S. Inoue H. Ucihda, K. Takeshita, K. Koterazawa (Himeji, Japan) and R.P. Howson (Loughborough, UK)

Preparation and physical properties of TMT–TTF-$C_{60}Br_6$ Langmuir–Blodgett film 120
Y. Xiao (Lanzhou, People's Republic of China), Y. Ye (Ningbo, People's Republic of China) and Z. Yao (Lanzhou, People's Republic of China)

Preparation of textured and photoactive 2H–WS_2 thin films by sulfurization of WO_3 124
A. Ennaoui, S. Fiechter, K. Ellmer, R. Scheer and K. Diesner (Berlin, Germany)

Optical and thermal characterization of coatings 132
J.P. Roger, P. Gleyzes, H. El Rhaleb, D. Fournier and A.C. Boccara (Paris, France)

Growth morphology and misfit relaxation of MBE-grown $In_{0.6}Ga_{0.4}As$ on GaAs(001). 139
K. Tillmann, D. Gerthsen, A. Förster and K. Urban (Julich, Germany)

Influence of sputtering pressure on the microstructure evolution of AlN thin films prepared by reactive sputtering. . . . 148
H.-C. Lee, G.-H. Kim (Taejon, South Korea), S.-K. Hong (Suwon, South Korea), K.-Y. Lee, C.-H. Chun and J.-Y. Lee (Taejon, South Korea)

Effect of laser repetition rate on the melting and ablation of $Ni_{24}Zr_{76}$ alloy ribbon 154
S. Luby, E. Majkova, E. Illekova, R. Sandrik (Bratislava, Slovak Republic), E. D'Anna, A. Luches, A. Perrone (Lecce, Italy) and S. Enzo (Venice, Italy)

Growth mechanism and structure of electrodeposited Cu/Ni multilayers 160
L. Wang, P. Fricoteaux (Reims, France), K. Yu-Zhang (Noisy le Grand, France), M. Troyon, P. Bonhomme, J. Douglade and A. Metrot (Reims, France)

Surfaces, Interfaces and Colloidal Behaviour

Electric sub-band studies at an AlGaAs/GaAs heterointerface by photoluminescence 168
D.Y. Kim, T.W. Kang and T.W. Kim (Seoul, South Korea)

Kinetic model of vapour-deposited thin film condensation: stage of liquid-like coalescence. 173
A.V. Osipov (St Petersburg, Russia)

Pulsed-laser-induced synthesis of nickel sulphides in sulphur-containing fluids 183
V.M. Anischik, M.I. Markevich, F.A. Piskunov and V.A. Yanushkevich (Minsk, Belarus)

Carbon depth distribution in spin-on silicon dioxide films. 186
N.V. Gaponenko, H. Gnaser, P. Becker (Kaiserslautern, Germany) and V.A. Grozhik (Minsk, Belarus)

Metallurgical and Protective Hard Layers

Annealing effects on a-SiC:H and a-SiC:H(F) thin films deposited by PECVD at room temperature 192
D.S. Kim and Y.H. Lee (Philadelphia, PA, USA)

Corrosion behaviour in acid solution of (Ti, Cr)N_x films deposited on glass 202
Y. Massiani, P. Gravier (Marseille, France), L. Fedrizzi (Trento, Italy) and F. Marchetti (Povo, Italy)

Surface modification in nitrogen and boron-ion implanted P18 high speed steel with TiN coating 209
V.I. Dimitrova (Rousse, Bulgaria)

Mechanics and Nanomechanics of Thin Layers

Nanoindentation of amorphous aluminum oxide films I. The influence of the substrate on the plastic properties 219
N.G. Chechenin, J. Bøttiger and J.P. Krog (Aarhus, Denmark)

Nanoindentation of amorphous aluminum oxide films II. Critical parameters for the breakthrough and a membrane effect in thin hard films on soft substrates 228
N.G. Chechenin, J. Bøttiger and J.P. Krog (Aarhus, Denmark)

Crystallization of amorphous silicon by $NiSi_2$ precepitates. 236
O. Schoenfeld (Saitama, Japan), T. Hempel (Magdeburg, Germany), X. Zhao and Y. Aoyagi (Saitama, Japan)

Electronics, Optics and Opto-electronics

Dispersion of the electro-optical response in poled polymer films determined by Stark spectroscopy 241
C. Heldmann, L. Brombacher, D. Neher (Mainz, Germany) and M. Graf (Bayreuth, Germany)

Optical properties of Tm_2S_3 thin films 248
A.V. Gigineishvili, Z.U. Dzhabua, K.D. Davitadze and L.N. Glurdzhidze (Tbilisi, Georgia)

Growth mechanisms of silicon films by laser-induced chemical vapor deposition 251
S. Tamir, Y. Komem, M. Eizenberg and J. Zahavi (Haifa, Israel)

Antireflection coatings on KCl single-crystal windows with low optical loss 256
G. Atanassov, D. Popov (Rousse, Bulgaria) and P.-F. Gu (Hangzhou, People's Republic of China)

Photoinduced phenomena in spin-coated vitreous As_2S_3 and AsSe films. 263
S. Shtutina, M. Klebanov, V. Lyubin, S. Rosenwaks and V. Volterra (Beer-Sheva, Israel)

Effects of annealing on the electrical conductivity of C_{60} films 266
J. Gong, F. Zhang, Y. Li, G. Ma and G. Chen (Lanzhou, People's Republic of China)

Langmuir–Blodgett, Biological and Related Films

Langmuir–Blodgett films made from yttrium arachidate. 271
M. Schurr, D. Brandl, Ch. Tomaschko, Ch. Schoppmann and H. Voit (Erlangen, Germany)

Miscibility of cyanine dyes in two-dimensional aggregates. 275
V. Bliznyuk (Cambridge, UK) and H. Möhwald (Mainz, Germany)

Characterization of long-periodic layered structures by X-ray diffraction. Part VI: electron density distribution and chain orientation in a Langmuir–Blodgett film of cadmium stearate 280
Y. Sasanuma (Ibaraki, Japan) and H. Nakahara (Urawa, Japan)

Characterization of behenic acid/glucose oxidase Langmuir–Blodgett films by spectrophotometry: a tentative model of their organization 287
C. Fiol, S. Alexandre, N. Dubreuil and J.M. Valleton (Mont-Saint-Aignan, France)

Thin Film Devices, Sensors and Actuators

IR spectroscopic study of SO_2 adsorption on polysiloxane layers containing tertiary amino groups. 296
L.L. Vasiljeva, F.N. Dultsev and A.H. Milekhin (Novosibirsk, Russia)

Morphologic and spectroscopic characterization of porous Pt/GaAs Schottky diodes by scanning tunnelling microscopy 299
J. Masó, N. Barniol, F. Pérez-Murano and X. Aymerich (Bellaterra, Spain)

Deposition of thin polycrystalline films of cuprous thiocyanate on conducting glass and photoelectrochemical dye-sensitization 307
K. Tennakone, A.R. Kumarasinghe, P.M. Sirimanne and G.R.R.A. Kumara (Kandy, Sri Lanka)

Spectral response of monoclinic and triclinic lead phthalocyanine to nitrogen dioxide. 311
D. Campbell and R.A. Collins (Lancaster, UK)

Growth and characterization of 3C–SiC films on Si substrates by reactive magnetron sputtering; effects of CH_4 partial pressure on the crystalline quality, structure and stoichiometry 317
Q. Wahab, L. Hultman, I.P. Ivanov, M. Willander and J.-E. Sundgren (Linköping, Sweden)

Condensed Matter Film Behaviour

Optical absorption behaviour of evaporated $ZnIn_2Se_4$ thin films 322
T.A. Hendia and L.I. Soliman (Cairo, Egypt)

Influence of composition and heat treatment on the structure of Se–Te films 328
A. El-Korashy (Assiut, Egypt), H. El-Zahed, M. Radwan (Cairo, Egypt) and A.M. Abdalla (Assiut, Egypt)

Photoresponse of polycrystalline ZnO films deposited by r.f. bias sputtering 334
D.H. Zhang and D.E. Brodie (Waterloo, Ont., Canada)

Errata

Erratum: Mixed-stack charge-transfer films prepared by Langmuir–Blodgett technique and donor doping (Thin Solid Films, vol. 254, nos. 1–2, 1995, pp. 240–245) 341

Errata: Determination of optical constants of molecular films assembled via alternate polyion adsorption (Thin Solid Films, vol. 254, nos. 1–2, 1995, pp. 246–251) 343

Author Index 345

Subject Index 347